Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROBLEMS FOR SOLUTION.

ALGEBRA.

219. Proposed by Dr. SAUL EPSTEEN, The University of Chicago.

Sum to infinity $\frac{1.2}{3}+\frac{2.3}{3^2}+\frac{3.4}{3^3}+\dots\dots$

220. Proposed by L. ROBINSON, B. S., Philadelphia, Pa.

Find the sum of the first $n+1$ terms of the series

$$1+\frac{m}{1!}+\frac{m\,(m+1)}{2!}+\frac{m(m+1)(m+2)}{3!}+\dots\dots$$

221. Proposed by F. P. MATZ, Ph. D., Sc. D.

Eliminate the unknowns from

$$x/y+y/z+z/x=a\dots\dots(1),\quad x/z+y/x+z/y=b\dots\dots(2),$$
$$(x/y+y/z)(y/z+z/x)(z/x+x/y)=c\dots\dots(3).$$

222. Proposed by G. W. WALKER, Camden, N. J.

Extract the square root of $87-12\sqrt{42}$.

GEOMETRY.

245. Proposed by J. H. M. MACLAGAN-WEDDERBURN. M. A., Chicago, Ill.

Given two lines of fixed length, $AB=a$, $BC=b$, perpendicular to each other. A line CP is drawn making $\angle BPC=\theta$. AD is the perpendicular to AB meeting CP in D. Find by Euclidean construction the angle θ such that $AD^2\cos^2\theta+b^2\sin^2\theta$ is a minimum.

246. Proposed by T. L. CROYES, Paris, France.

Given a movable point O on a fixed diameter of a circle S, an inscribed triangle ABC, and the perpendiculars OM, ON, OP from the point O on the sides AB, AC, BC. Prove, by pure geometry, that the circle circumscribing the triangle MNP will always pass through a fixed point.

247. Proposed by SETH PRATT, C. E., Tecumseh, Neb.

From two given points without a circle to draw two lines meeting in the circumference and making equal angles with the tangent at that point.

AVERAGE AND PROBABILITY.

131. Proposed by F. P. MATZ. Ph. D., Sc. D.

In a given square an arc is described at random the center being one of the vertices of the square. What is the probability that this arc is longer than a side of the square?

NOTE.—Problems and solutions in the departments of Geometry, Calculus, Mechanics, and Average and Probability should be sent to B. F. Finkel; and those in the departments of Algebra, Diophantine Analysis, Miscellaneous, and Group Theory should be sent to Dr. Saul Epsteen. Our contributors should carefully observe this notice if proper credit for contributions is to be given.